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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,177	11/02/2001	Shinichi Terashima	52433/663	9514
26646	7590	10/19/2005	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			GRAYBILL, DAVID E	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/000,177

Applicant(s)

TERASHIMA ET AL.

Examiner

David E. Graybill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 63-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 63-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-6-4 has been entered.

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 63-71 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Eldridge (6727579).

At column 3, lines 12-24; column 28, line 65 to column 30, line 18; column 45, line 63 to column 57, line 15; column 60, line 63 to column 61, line 5; column 62, lines 10-46; column 100, line 44 to column 101, line 58;

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and column 132, line 43 to column 135, line 19, Eldridge discloses the following:

A semiconductor device, using a bonding material 792 for linking a semiconductor 791 terminal "bond pads" to a connecting terminal 793 for an outside circuit, characterized by reinforcing the bonding material and/or a joint between the semiconductor terminal and the connecting terminal with a reinforcing material "plating" comprising a metal coating and/or an inorganic material coating covering the bonding material and/or joint; the metal coating is a metal comprising one or more of nickel, copper, tin, solder, silver, cobalt, chromium, platinum, palladium and tungsten;

A semiconductor device, using a bonding wire 792 for linking a semiconductor terminal to a connecting terminal for an outside circuit, characterized by reinforcing the bonding wire, either partially or wholly, with a reinforcing material comprising a metal coating and/or an inorganic material coating covering the bonding wire, after bonding work; the metal coating is a metal comprising one or more of nickel, copper, tin, solder, silver, cobalt, chromium, platinum, palladium and tungsten; forming a diffusion layer "gold-tin alloy" at an interface between the metal coating and the bonding wire; the bonding wire is fabricated from any one of gold, copper, aluminum, silver and an alloy of any of these metals; wherein the bonding wire is gold or gold alloy and an outermost surface of the bonding

wire has a gold concentration of 99% or less; coating semiconductor terminal, the connecting terminal and the bonding wire with resin; forming the connecting terminal using a substrate, a lead frame or a TAB tape; forming the semiconductor terminal on any one of a semiconductor chip, a substrate, a lead frame or a TAB tape.

To further clarify the disclosure of forming a diffusion layer at an interface between the metal coating and the bonding wire, as cited, Eldridge discloses, "depositing tin as a first layer on a gold wire stem, with a subsequent reaction of gold and tin at a temperature below the melting temperature of gold-tin eutectic. A gold-tin alloy results, which is significantly stronger than (pure) gold." Furthermore, although Eldridge does not appear to disclose verbatim the process limitation "forming a diffusion layer," the process of forming a diffusion layer at an interface between the metal coating and the bonding wire is inherent in the process of Eldridge of depositing the metal coating, and the product of Eldridge inherently possesses any structural characteristics imparted by the process limitation. See *In re Fitzgerald, Sanders, and Bagheri*, 205 USPQ 594 (CCPA 1980). In any case, the scope of the claims is not limited to the presence of a diffusion layer because the transitional claim language "characterized by" is inclusive of additional steps other than the particular recited forming step,

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and the scope of the claims encompasses a step of removing the diffusion layer resulting in a final claimed product having no diffusion layer.

Applicant's remarks filed 12-6-4 have been fully considered and are adequately addressed by the rejections supra.


The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions relevant to the examination of the instant invention.

**For information on the status of this application applicant should check PAIR:**

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.**

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.  
The fax phone number for group 2800 is (571) 273-8300.

  
David E. Graybill  
Primary Examiner  
Art Unit 2822

D.G.  
14-Oct-05